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**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK**

----- X  
APL CO. PTE. LTD., THE BRITANNIA STEAM  
SHIP INSURANCE ASSOCIATION LIMITED,  
THE WEST OF ENGLAND SHIP OWNERS  
MUTUAL INSURANCE ASSOCIATION  
(LUXEMBOURG)

Plaintiffs,

v.

KEMIRA WATER SOLUTIONS, INC., (formerly  
ENVITECH CO. LTD.,

Defendants.  
----- X

: ECF Case

:  
: 11-cv-1686 (KBF)(KNF)

:  
: DIRECT TRIAL TESTIMONY  
: DECLARATION OF  
: DR. JEFFREY V. DAGDIGIAN

:  
: Trial Date: June 24, 2013

: Time: 9:00 a.m.

: Courtroom: 15A

:  
: Hon. Katherine B. Forrest

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I, Dr. Jeffrey V. Dagdigian, declare as follows:

1. I am the owner and Managing Principal Scientist of Waterstone Environmental, Inc. Waterstone is an environmental consulting firm that specializes in hazardous chemical contamination of soil and groundwater. As Managing Principal Scientist, I oversee the work of our 11 staff scientists who specialize in various fields relating to our consultation work, including geology, hydrogeology, engineering, toxicology, and environmental science.

2. I received my B.S. in Geology from the University of Southern California (USC) in 1980, both of which I received from University of Southern California (USC).

3. After I finished my Ph.D., I worked for Unocal Corporation from 1980 to 1988 at their research center in Brea, California. One of the projects I worked on during this time was the use of ferrous chloride and ferrous sulfate as a co-precipitation agent for the removal of heavy metal from industrial wastewaters. Based on this research, I am familiar with the chemical and physical properties of these materials.

4. From 1988 to 1997, I was employed by McLaren/Hart Environmental Engineering, Inc., where I became Senior Vice President in charge of West Coast operations. In addition to managing hundreds of professional technical staff, I also worked in the field on projects as a consultant performing soil and groundwater investigations, developing remediation and clean-up strategies, and implementing those strategies in a manner consistent with our environmental goals.

5. In 1997, I became the Co-Owner and Managing Partner of Waterstone. From January 2013 to present, I have been the sole owner and Managing Principal Scientist of Waterstone. Since 1997, I have directed and provided senior oversight for many projects

involving subsurface contamination in soil and groundwater. I regularly meet with various governmental agencies, including the California and the United States Environmental Protection Agencies (EPA), to discuss and provide advice relating to the extent and nature of contamination in soil and groundwater, migration of contamination, clean-up and remediation of chemical contamination, and costs related to clean-up and remediation of sites.

6. At Waterstone, I am regularly asked to advise on regulatory issues pertaining to various environmental statutes and regulations, including the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA") and the Resource Conservation and Recovery Act of 1976 ("RCRA"). My primary expertise lies in investigating and assessing contamination of soil and groundwater, as well as the appropriate methods of remediation and clean-up of contaminated sites in a reasonable and cost-effective manner so as to comply with applicable regulations. In CERCLA cases, this means evaluating whether the overall response effort and costs associated therewith are consistent with the "all-appropriate" standard of CERCLA.

7. I am also a Certified Environmental Manager (CEM), which is a certification required by the State of Nevada to establish that I possess the knowledge, training, and experience to act as an environmental consultant for projects concerning the management, release, investigation, sampling, clean-up, and remediation of hazardous substances.

8. Since 1992, I have taught numerous courses at the University of California, Irvine. I have also been a frequent speaker at various industry conferences and seminars. I have been a member of the American Society of Environmental Engineers and Technicians ("ASEET") since 1992. I have also been a member of the California Society of Environmental Engineers and Technicians ("CSEET") since 1992. I have also been a member of the National Society of Environmental Engineers and Technicians ("NSEET") since 1992.

9. A true and correct copy of my current *curriculum vitae* is attached hereto as Exhibit 5A.

10. I have been retained by Defendant KEMIRA WATER SOLUTIONS, INC. to review the response and clean-up actions taken by Plaintiff APL in responding to the ferrous chloride crystal leaks on both vessels and subsequently at the California United Terminal at the Port of Long Beach and the APL/Eagle/GGS terminal at the Port of Los Angeles were (1) adequate in terms of the regulatory requirements (including the National Contingency Plan), (2) effective in terms of providing a permanent solution to any releases and/or threatened releases, (3) reasonable, effective and cost-efficient, and (4) resulted in a CERCLA-quality clean-up.

11. Specifically, I was asked to review voluminous evidence in this case and to provide my opinions regarding the extent to which the response and clean-up actions taken by APL in responding to the ferrous chloride crystal leaks on both vessels and subsequently at the California United Terminal at the Port of Long Beach and the APL/Eagle/GGS terminal at the Port of Los Angeles were (1) adequate in terms of the regulatory requirements (including the National Contingency Plan), (2) effective in terms of providing a permanent solution to any releases and/or threatened releases, (3) reasonable, effective and cost-efficient, and (4) resulted in a CERCLA-quality clean-up.

12. In connection with this assignment, I have reviewed all documents and photographs produced by APL in this litigation relating to its response and clean-up actions. I have also reviewed all documents and photographs produced in this litigation by Patriot Maritime, LLC. In addition, I have reviewed all of the depositions taken in the CERCLA costs phase of this litigation (since the summary judgment motions), plus several of the depositions taken earlier in the case. I attached a list of

each document, photograph, or deposition transcript that I relied on in forming my opinions to my expert report (Exhibit J to report).

13. My opinions are based on the documents, photographs, and testimony I reviewed, my 33 years of professional experience, training and education as an environmental consultant, including my field work in overseeing and/or assessing the clean-up and remediation of hazardous substance contamination, and my working understanding of CERCLA and the NCP regulations which I have obtained throughout my professional career. In reaching my conclusions, I have applied the facts and evidence which I have gleaned from the documents, photographs, and deposition testimony in this litigation to my specialized knowledge and experience as an environmental consultant in hazardous substance contamination, remediation, response, clean-up, and cost assessment.

14. Due to the fact that neither APL nor any of its contractors produced any reasonably comprehensive and detailed summary of the specific tasks performed during each step of the response with respect to either shipment, one of my largest tasks was to review all of the documents, photographs, and testimony referenced above in order to piece together precisely how, when and where APL responded to the leaks for each shipment. A true and correct copy of my detailed narrative compiling and interpreting the documentary evidence of the response actions taken with respect to the first shipment of ferrous chloride crystals carried on board the M/V Hyundai Independence is attached hereto and identified as Trial Exhibit DX30. A true and correct copy of my detailed narrative compiling and interpreting the documentary evidence of the response actions taken with respect to the second shipment of ferrous chloride crystals carried on board the M/V APL Singapore is attached hereto and identified as Trial Exhibit DX35.

15. In order to assess the adequacy, reasonableness, effectiveness and cost-efficiency of any CERCLA response effort, it is necessary to break down the specific tasks performed at each stage, because each task and the associated cost must be separately evaluated to determine whether the actions were cost effective and deserving of cost reimbursement; or wasteful, duplicative, and/or ineffective and not deserving of cost reimbursement. In my review of the documents, photographs, and testimony referenced above, I discovered that APL had not only failed to break down its response actions by specific tasks, but some tasks that were actually performed were never documented at all, or were only vaguely referred to in after-the-fact reports. It was only through my painstaking cross-referencing of the documents and photographs (most of which include date stamps which could be cross-referenced with invoices and daily work records) with the deposition testimony of the people overseeing or involved in the response effort that I was able to establish precisely what tasks were performed when, and at what cost. Since APL failed to properly document its response effort in any manner which would allow the Court to easily determine what happened, I believe my detailed narratives attached hereto and identified as Trial Exhibits DX30 and DX35 will be highly useful to the Court.

16. In the course of my compilation of the work areas (including staging areas, trans-loading areas, and decontamination pools) were constructed, dismantled, and reconstructed in various locations at various times throughout the response efforts at both terminals. In order to accurately document the work areas, I created various figures or diagrams showing the layout of the terminals and the work areas that were constructed, dismantled, and reconstructed in the same or different locations at various times. A

true and correct copy of a diagram of the CUT terminal at the Port of Long Beach, which is a reproduction of a diagram produced by Patriot in this litigation (PATRIOT000831), is attached hereto and identified as Trial Exhibit DX31. A true and correct copy of my figure showing detailed maps of CUT Pier D using aerial photographs (from Google Earth) and photographs taken by Patriot is attached hereto and identified as Trial Exhibit DX32. A true and correct copy of my figure showing detailed maps of CUT Pier E using aerial photographs (from Google Earth) and photographs taken by Patriot, where operations at CUT were moved in late November 2006, is attached hereto and identified as Trial Exhibit DX33. A true and correct copy of my figure showing detailed maps of CUT Pier F using aerial photographs (from Google Earth) and photographs taken by Patriot is attached hereto and identified as Trial Exhibit DX34. A true and correct copy of my figure showing the work areas used at the APL/Eagle/GGS terminal using aerial photographs (from Google Earth) and photographs taken by Patriot is attached hereto and identified as Trial Exhibit DX35. A true and correct copy of my figure showing the work areas used at the APL/Eagle/GGS terminal using aerial photographs (from Google Earth) and photographs taken by Patriot is attached hereto and identified as Trial Exhibit DX36.

17. The diagrams or figures I created depicting the numerous work areas constructed, dismantled, and reconstructed at the CUT and APL/Eagle/GGS terminals provide a useful visual representation of the work areas used at the APL/Eagle/GGS terminal using aerial photographs (from Google Earth) and photographs taken by Patriot is attached hereto and identified as Trial Exhibit DX36. inefficient, wasteful, and duplicative, as more fully explained in my opinions expressed below.

18. My overall opinion of the work areas used at the APL/Eagle/GGS terminal using aerial photographs (from Google Earth) and photographs taken by Patriot is attached hereto and identified as Trial Exhibit DX36. is summarized in Paragraph 19. My specific conclusions based on the factual record I reviewed and my opinions as to the adequacy, reasonableness, effectiveness, and cost-effectiveness of the work areas used at the APL/Eagle/GGS terminal using aerial photographs (from Google Earth) and photographs taken by Patriot are set forth in Paragraphs 20 to 41.

19. From the moment that the containers in each shipment were discharged from the vessels, APL assumed complete control over the ferrous chloride crystals in an effort to simultaneously save itself money by knowingly choosing what it believed was a cheap and temporary method of containment under the assumption that the crystals would be delivered within a few weeks, while at the same time insisting on holding the ferrous chloride crystals hostage subject to CRNA's cost of cleanup. It was not until it was fully reimbursed for its ever-mounting response and clean-up costs. The inadequacy and temporary nature of the cheap method of containment used by APL resulted in what can only be described as a comedy of errors, which (1) led to the crystals being stored on the terminal premises for several months (rather than a few weeks), (2) caused the temporary containment measures selected by APL to fail not once but twice, (3) required APL and its contractors to re-do not only the repackaging of the crystals, but also to reconstruct the staging and decontamination areas multiple times, and (4) ultimately led to CRNA's cost of cleanup. APL finally selected the appropriate method of containment of the ferrous chloride crystals, which also turned out to be less expensive than the initial over-bagging efforts. Since APL never consulted with KWS at all regarding the appropriate method(s) of containing the leaking ferrous chloride crystals (see Trial Testimony of Jerome P. Fahey and Jan Pavlicek), but instead only contacted KWS to advise it that APL was holding it responsible for the mounting clean-up costs, KWS had no control over the ferrous chloride crystals or the response actions taken by APL.

20. The quality of the containment method used by APL in the first shipment was extremely poor. For example, CUT discharged about 20 containers onto an unidentified area of its terminal without any secondary containment before Patriot arrived. Some of these containers were placed on trailers and some were placed directly



on the asphalt. Once Patriot arrived on scene, it was decided that the remaining containers  
 ectt { lpi "y g'htttquw'ej mltkf g'et { uvcnu. "cu'y gni'cu'cm'öxle vko ö"eqpvc kpgtu. "y qwf "dg" f kiej cti gf "  
 qp vq "öd qo d"ectwö "ukö krt "vq "mrv-bed trailers) lined with plastic (shown below), and staged in



another area \*öctgc"7222ö. "y j lej "Kj cxg'tghgttgf "vq"cu"öRkt "F "Uci lpi "Ctgc"3ö"lp"Trial Exhibit  
 DX32) with limited secondary containment in the form of a single layer of plastic sheeting held  
 down by sand bags (see photo below).



APL and Patriot then decided to build a more permanent secondary containment and decontamination area using multiple layers of plastic sheeting, plywood, and industrial rug matting (Kj cxg'tghgttgf "v"cu"öRlgt"F "Uci lpi "Ctgc"4ö"lp" Trial Exhibit DX32), and moved the hgttqwu'ej mtkf g'eqpvclpgtu'ltqo "vj g"ödqo d'ectwö"v"vj g'pgy "ctgc0 In my opinion, the first two staging/work areas (unlf gpvklgf "ctgc"cpf "öRlgt"F "Uci lpi "Ctgc"3ö+y gt g'lpf gs wcvg"v"eqpvclp" the ferrous chloride crystals, as evidenced by the fact that APL and Patriot had to construct a o qtg'r gto cpgpv'uci lpi "cpf "f geqpvcö lpcvqp"ctgc"cv"öRlgt"F "Uci lpi "Ctgc"4ö"and because they had to clean-up the releases of ferrous chloride on the asphalt under and around these areas as shown below.



Since these first two staging areas were inadequate to respond to the leaking containers, all costs associated with constructing the areas, moving the containers to and from the areas, and decontaminating the areas afterwards were unreasonable, unnecessary to respond to the leaks,

and ineffective in terms of contaminant containment and cost-efficiency. An important part of the NCP is the required planning and feasibility study phases which were basically ignored by CRN. Vj k'ncm'qhr' rppkpi "cpf "CRN' i qcn'q perform this project as cheaply as possible resulted in catastrophic results, as I explain below.

21. Later, in early November 2006 (3 to 4 weeks after the M/V Hyundai Independence arrived at the Port of Long Beach), CUT advised APL that Patriot would need to ci clp'tgmecvg'yj g'uoci kpi "cpf "fgeqpwo kpcvqp"ctgc"lp'qtf gt"vq'htgg'wr "yj g'ur ceg"cv'õRlgt "F " Uci kpi "Ctgc"4ö"lqt"uj k u'f kueharging bulk steel. As a result, APL instructed Patriot to dismantle õRlgt "F "Uci kpi "Ctgc"4ö"cpf "tgeqpwtveva new staging and decontamination area at CUT Pier E \*f gr levgf "lp"Vtken'Gzj kdk'F Z55-0"Cm'eqpvkpgtu'y gtg'yj gp'o qxgf "vq"EW'Rlgt"G."cpf "õRlgt "F " Uci kpi "Ctgc"4ö'y cu'f kuo cpvrgf "and the area made ready for use by the ships discharging bulk steel. All of this work was unnecessary to respond to the leaking containers of ferrous chloride crystals, because it was only necessitated by the business concerns of CUT. Hence, all costs associated with building the new staging and decontamination area at CUT Pier E, the dismantling of CUT Pier D Staging Area 2, and moving all containers and equipment to Pier E were unreasonable, unnecessary, duplicative, wasteful, and inefficient.

22. Due to the fact that Patriot, at the direction of APL, was still responding to the ferrous chloride releases associated with the M/V Hyundai Independence when the M/V APL Singapore arrived at the Port of Los Angeles, APL contracted with Transloading Environmental Corp. (TEC) to supervise container discharging and to set up staging and decontamination areas for leaking and victim containers at the APL/Eagle/GGS terminal. Again, given the poor planning, lack of project management, and hastiness of the response action, TEC prepared inadequate staging and decontamination areas using damaged materials that contained holes,

were not capable of preventing liquids from impacting the asphalt, and did not adequately contain released ferrous chloride as shown in the photo below (arrows identify damaged areas).



These initial staging and decon areas (shown in the 3 photos below) appear to have been used only for 2 or 3 days.







These inadequate areas were dismantled and rebuilt using multiple layers of plastic, plywood, and/or industrial carpet in generally the same areas shortly thereafter as shown in the photos below.



The inescapable conclusion is that the initial areas had to be replaced because they were ineffective in containing the ferrous chloride due to improper construction and inadequate planning. These initial response actions taken at the APL/Eagle/GGS terminal with respect to constructing the staging, containment, and decontamination areas during Phase I of the response effort are a further example of the inappropriate, poorly-thought-out response effort that mirrored the same poor and inappropriate efforts of the initial staging and decontamination areas built by

Patriot two weeks before at the CUT terminal. It is apparent that no information was passed to TEC based on the mistakes made at CUT to determine what actions would have been appropriate for APL and TEC to have taken at the APL terminal. (Ugg'Gzj kdk'öJ öIVtka Exhibit DX36.)

23. With respect to the containment and/or repackaging of the bulk bags containing the ferrous chloride et {ucnu.'CRNä'tgur qpugu'q both the first and second shipment at both the CUT and APL/Eagle/GGS terminals demonstrate extremely poor planning, decision making, organization, and documentation. Again, APL never consulted with KWS regarding the most appropriate and/or cost-efficient method of containing the leaking bulk bags of ferrous chloride crystals. (See Trial Testimony of Jerome Fahey and Jan Pavlicek.). It is a matter of common sense that one would consult with the party who best knows the chemical properties and propensities of ferrous chloride crystals to determine the most appropriate method of containing and/or repackaging the crystals to avoid further leakage. Yet, APL proceeded to make all of its decisions regarding the method of containing and/or repackaging the ferrous chloride crystals based on its concern for saving itself time and money under the unfounded assumption that it would deliver the crystals to KWS within 2 to 3 weeks. In my opinion, CRNä'tcen'qh'r rppkpi ." inadequate project management, and hasty decision-making resulted in a cleanup action which was not ðeqpukugpvö'y kj 'vj g'procedures outlined in the National Contingency Plan, or designed to result in "p" c"öEGTENC-quality clean-up,ö'r ctvwrtñ( "p"ri j v'qh'vj g'hcev'vj cv'CRNä't inappropriate actions caused two subsequent leak events and required APL to perform multiple clean-up actions, all of which had an enormous effect on the overall cost of the response effort.

24. To begin with, Patriot and/or TEC advised APL that there were various options for containing and/or repackaging the ferrous chloride crystals. Patriot and/or TEC recommended that APL select tj g"ötqm-qh"ö"dkp"o gvj qf .y j lej "p xqmgf "draining all liquid from

the bulk bags, wrapped in a plastic liner (see photo below).



25. CRN's cost assumption was incorrect and that APL and its subcontractor were able to develop a cost-effective method for placing the ferrous chloride crystals into roll-off bins during Phase II of the response. CRN's cost assumption was too expensive and time-consuming is well-documented in many of the records reviewed by the Commission. However, when the final costs for the project are evaluated, it is clear that CRN's cost assumption was incorrect and that APL and its subcontractor were able to develop a cost-effective method for placing the ferrous chloride crystals into roll-off bins during Phase II of the response. CRN's cost assumption was too expensive and time-consuming is well-documented in many of the records reviewed by the Commission. However, when the final costs for the project are evaluated, it is clear that CRN's cost assumption was incorrect and that APL and its subcontractor were able to develop a cost-effective method for placing the ferrous chloride crystals into roll-off bins during Phase II of the response.



26. Instead, APL knowingly opted for the cheaper option of over-bagging, relying on the assumption that the over-bagged bulk bags would be delivered to KWS within a few weeks, while at the same time demanding payment of substantial sums from Fairyland and KWS for all expenses incurred before any delivery would be made. The photos below show the first over-bagging where bulk bags observed to be leaking after removal from the ship were overbagged with a large plastic bag and non-leaking bulk bags were left as-is (this photo was taken one to two weeks after the first overbag event and shows further leakage that occurred in the interim). Note that no additional containment or absorbent materials were placed in the container during this initial (first) over-bagging event.





This strategy of putting cost considerations over clean-up needs "ku'go ddf kpf 'lp'CRNou'gctrlguv' action. It is known that eleven (11) of the containers from the APL Singapore showed no signs of leaking when discharged. Instead of delivering these containers to KWS, APL held them on the terminal "cu'rgxgtci g'hqt 'MY Ua'r c { o gpv'qh'v g'tgur qpugu'equu. until these non-leaking containers began to leak and required a response action.

27. Although it was not documented in any of the after-the-fact reports or workplans generated by APL, Patriot, or TEC "f wlp i "öRj cug "Kö"chgt "Lcpwct { "37."4229+, my detailed review of the documents and analysis of the photographs with date stamps, in conjunction with the deposition testimony of Dale Streiter (Pattkwa'Rgtuqp'O qu'S wchgf +, revealed that APL cpf "Rcvtkqv'cewcm { 'r gthqto gf "vj g"öqxgt-dci i kpi ö'o gjv qf "qh'eqpvcklp i "cpf lqt'tgr cenci kpi "vj g" ferrous chloride crystals two times "r tlqt "v"lpcm { 'f gek kpi "v"wlpi "vj g"ötqm-qlhö"dlp"o gjv qf " initially recommended by TEC and Patriot and rejected by APL. The second over-bagging event included the overbagging of all bulk bags, the use of industrial rug for absorbent inside the

equipment. "c" { "q" x w g p "k" g "v" g "e" p v k p g t "c" "o" f k r g t "y" t e r ö "k" m u t c v e d i n t h e p h o t o s  
below:



28. Initially, APL and Patriot decided to place only the obviously leaking bulk bags  
k p v "ö" x g t - d c i u . ö " c p f " v j g p " t g - u q y g f " v j g " ö" x g t - d c i i g f ö " d w m i d c i u " c p f " v j g " p q p - l e a k i n g b u l k b a g s  
(that were not over-bagged initially) in new, clean containers without any secondary containment

(lining of any sort) within the containers. However, within one to two weeks of completing this initial (first) over-bagging effort, the over-bagged bulk bags and some of the initially non-leaking bulk bags were discovered to be leaking again when closed containers thought to be ready for shipping to KWS were found to be leaking brown fluid onto the plastic that underlay the new containers at both CUT and APL/Eagle/GGS. [See Trial Exhibit JX27 (Depo. Exhibit 142), at PATRIOT000132-134.] Hence, APL and Patriot were forced to re-do the containment and/or repackaging work during a second over-bagging episode, demonstrating that its initial over-bagging effort was flawed and the solution was very temporary. Additionally, the second leak episode was not reported to any agency. This is a significant omission of the required cost recovery process described in the NCP. The third leak episode was reported to the Coast Guard, and as a result of this reporting, the Coast Guard

29. Although the distinction between the initial over-bagging effort and the second over-bagging effort is not described in any of the after-the-fact reports generated by APL, TEC, or Patriot; Dale Streiter, APL's Vice President of Operations, very clearly testified during his deposition that (1) the initial over-bagging effort was not successful; (2) photographs depicting bulk bags with outer lining were first opened by APL and Patriot; (3) photographs depicting bulk bags with outer lining were taken after the initial over-bagging effort; and (4) the initial over-bagging effort failed, that APL and Patriot

realized they needed to re-f q"vj g"õqxgt-dci i lpi ö work again during a second over-bagging event with more robust secondary containment (see Trial Exhibit JX27 (Depo. Exhibit 142), at PATRIOT000135-138). My review of the photographs with date stamps confirms that two over-bagging events occurred for both the shipments from the APL Singapore and Hyundai Independence as illustrated in photographs included in 26. and 27. above. [See Trial Exhibit JX27 (Depo. Exhibit 142), at PATRIOT000132-138.]

30. CRN"cpf "Rcvtlqwt'hckwtg"q"f qewo gpv'that there were actually two õqxgt-dci i lpi ö episodes (initial and second leak events) in the after-the-fact reports and plans drafted in January 2007, likely in an attempt to cover up the ineffectiveness of its initial response, is also a clear violation of the documentation and reporting requirements of the National Contingency Plan. According to 40 CFR Chapter 1, Subpart J, Part 300.160, the following documentation is required under NCP procedures: a) provide source/circumstances of release; b) identify responsible parties; c) describe response actions taken; d) provide accurate accounting of costs incurred for response actions; e) describe impacts and potential impacts to public health, welfare, and the environment; f) provide date of when notification was made to an oversight agency. The collection of reports provided to me does not appear to address or document necessary information as listed above. Each over-bagging event should have been documented according to the above steps as required by the NCP.

31. Once APL and Patriot noticed the new containers with the initial overbags were leaking and realized that the first õqxgt-dci i lpi ö'o gj qf "y cu"lpcf gs wcvg."vj g{"tg-opened all of the containers, removed each bulk bag (both the ones that had already been over-bagged and the initially non-leaking bulk bags), drained them of any newly-accumulated liquid, placed them in (what was sometimes a second) over-bag, and re-stowed them in clean containers lined with



plastic sheeting and sorbent rug, and then wrapped the plastic lining over all of the over-bagged bulk bags within the container. The photograph of the container as shown on the following photographs.





[See Trial Exhibit JX27 (Depo. Exhibit 142), at PATRIOT000135-138.] APL decided to use the second and again temporary "bagging" of the containers. The containers were stored in a staging area awaiting clearance for delivery to KWS. This work was complete at both terminals by the end of November 2006. The documents I reviewed indicate that the federal on-

32. Qpeg'ij g'ugeqpf "bagging" of the containers, the containers were stored in a staging area awaiting clearance for delivery to KWS. This work was complete at both terminals by the end of November 2006. The documents I reviewed indicate that the federal on-

scene coordinators (presumably the U.S. Coast Guard) approved the repackaged and re-stowed bulk bags of ferrous chloride crystals for immediate transfer to KWS on December 19, 2006.

[See Trial Exhibit JX21.]

33. However, despite CRN's apparent belief that it would deliver the ferrous chloride crystals to KWS within a few weeks, CRN's only communications that APL (through its HazMat Director and Person Most Qualified, Haldis Fearn) had with KWS throughout this period were to advise KWS that APL would hold KWS liable for all of the response costs. It is well-documented in the exhibits and deposition that CRN's conscious decision to essentially hold the ferrous chloride responsible for its mounting response costs. These two inconsistent positions taken by APL (the decisions to simultaneously use what APL believed to be the cheaper and temporary containment method, while demanding reimbursement of costs before releasing any of the cargo) ultimately caused the over-bagged bulk bags of ferrous chloride to be left at the two terminals for months, rather than weeks, which in turn caused the temporary second containment method to fail, and resulted in an additional (third) leak event at each terminal that was discovered on January 15, 2007 (referred to in Patriot and APL documents as the "third leak").

34. The containers storing the temporarily over-bagged bulk bags from the second over-bagging event were discovered to be leaking a third time on January 15, 2007 (although the third leak is referenced as Phase II in many documents). Photographs date-stamped January 15, 2007 shown below depict outward signs of leakage from containers and onto asphalt, demonstrating that APL and Patriot stored the containers with the twice over-bagged bulk bags of ferrous chloride crystals directly on asphalt without any secondary containment whatsoever,



despite having had so much trouble containing the leaks previously, and despite knowing that the

õqxtg-dci i kpi ö'o gy qf "y cu'qpn{ "c"vgo r qtct{ "o gcwtg0



[See Trial Exhibit JX27 (Depo. Exhibit 142), at PATRIOT000142-146.] This decision again

displays "CRN"u'eqo r mgv'h'kwtg'v'c'ej kxg'c"öEGTENA-quality clean-up;ö APL did not

successfully perform a permanent cleanup action because they persisted in using the ineffective

over-bagging method that over and over again allowed leakage. In addition, APL should have stored the containers in a staging area with secondary containment, anticipating that if the over-bagged bulk bags could not be delivered within the short time period anticipated by APL, the over-bagged bulk bags would leak again. Instead, APL chose to store the containers without any secondary containment, and incurred substantial costs to dismantle the staging and containment areas, as well as the decontamination pools, at both terminals during December 2006. Moreover, rather than delivering the containers in December after cleared by the U.S. Coast Guard for transport, APL continued to hold the containers while demanding payment from KWS for clean-up costs until the third leak event was discovered on January 15, 2007. APL was required to once again reconstruct all of the necessary staging, containment, and wet decontamination areas that it had just dismantled one month previously.



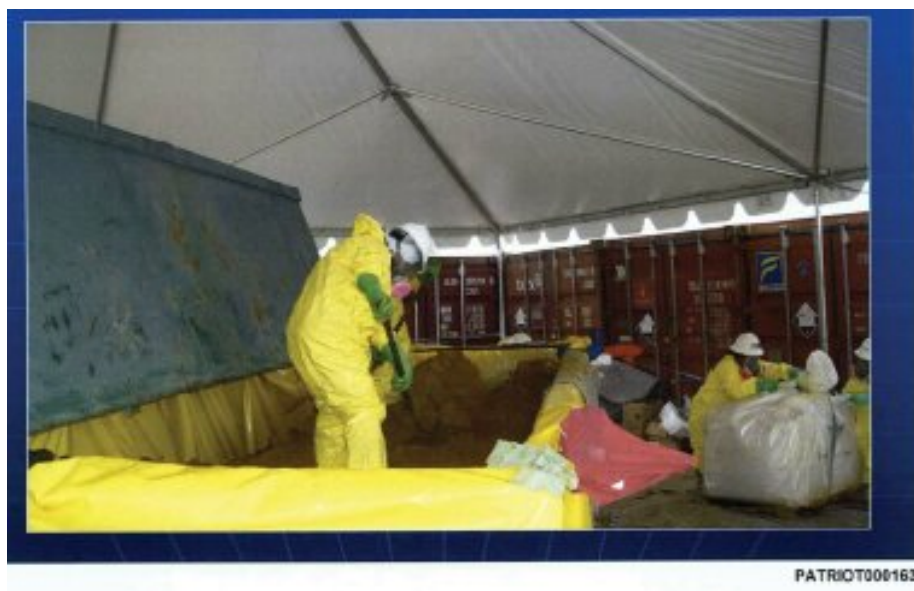


[See Trial Exhibit JX27 (Depo. Exhibit 142), at PATRIOT000147-158.] The temporary nature of this work and the need to re-do the heavy lifting and go through the quality clean-up bagging method implemented by APL was not cost effective, but instead was ineffective, inefficient, duplicative, and wasteful.

35. In response to the third leak event in January 2007 (referenced as Phase II in some documents), APL notified the U.S. Coast Guard, who proceeded to formally put into place many aspects of the NCP including: a) notifying various governmental entities, 2) setting up an

Incident Command Structure 3) opening a CERCLA fund, and 4) requiring APL to submit numerous written plans for the remediation and clean-up of the contamination. Because APL y cu'pq'rupi gt'tgur qpf kpi "v'cp"ögo gti gpe{ö'cu'k'y cu'f wtkpi "öRj cug'Kö"vj g'vj kf "rgcm'gxgpv" (Phase II) was classed as a öremediationö effort, rather than a öremovalö effort, which means that a much more formal response is required, and additional requirements of the National Contingency Plan come into play. This resulted in a substantial increase in the response costs, which was wholly caused by CRNöu'withholding delivery of the containers to leverage payment of expenses from KWS and CRNöu'eqo r ngv'hcw'g'on two different occasions to achieve a öEGTENC-quality clean-wr ö'f wtkpi "öRj cug'Kö

36. In response to "vj g'vj kf "rgcm'gxgpv"Rj cug'Kö: "CRN"hcwm "ci tggf "v'wug'vj g'ötqm-qlhö"dlp"cpf "ödwtkq-y tcr ö'o gj qf "vj cv'CRN'vgugf "cpf "tglgev'f wtkpi "öRj cug'Kö"on October 26, 2006. [See Trial Exhibit JX27 (Depo. Exhibit 142), at PATRIOT000160-167.]





This third round of containing and repackaging the ferrous chloride crystals was complete by mid-February 2007.

37. It was not until February 15, 2007 that APL finally advised KWS that APL was willing to deliver the ferrous chloride crystals without first being fully reimbursed for its still-mounting response costs. [See Trial Exhibit PX48.] After significant negotiations, APL and KWS were able to "ci tgg"q"MY Uu"ceegr wpeg"qh'f grkxgt {"qh'vj g'i qqf u'qp"egtvcip"eqpf klqpu0" The roll-off bins containing the ferrous chloride crystals were then delivered to KWS at a rate of wy q"dkpu'r gt "f c {"qxgt"ugxgtcnly ggm"lp"Cr tklcpf "O c {"42290"MY Uu"ci tgggo gpv"q"ceegr v" delivery of the ferrous chloride crystal, which it did not possess title to and had rejected as non-conforming, actually saved APL almost \$200,000 in potential disposal costs. [See Trial Exhibit PX47 APL0003011-3012).

38. In my opinion, based on my detailed review of the documents, photographs, and deposition testimony and on my extensive knowledge and experience over the past 33 years in assessing and overseeing the remediation and clean-up of various hazardous materials contamination sites, CRN's overall response efforts subsequent to discharging the containers from the vessels do not constitute "C"öEGTENC-quality clean-wr ö"and do not substantially comply with the National Contingency Plan.

39. C"öEGTENC-quality clean-wr ö"ku"cp"GRC-defined term that is intended to describe a clean-wr "vj cv'o ggu"vj g'o kpo wo "tgs wkt go gpw"qh'EGTENC0"C"öEGTENC-quality clean-wr ö"ku"r gt o cpgpv"equv-effective solution addressing a release of a hazardous substance(s) to the environment in a way that is protective of human health and the environment, is consistent with applicable regulations, and provides the opportunity for public participation.

This "f h p k q p" q h "c" ðEGTENC-quality clean-wr ö "k u w r q t v g f " In the preamble to the 1990 NCP, wherein EPA defined a "CERCLA-quality cleanup" as a response action that satisfies the three remedy selection requirements of CERCLA section 121(b)(1). To satisfy these requirements, remedial actions must: a) be 'protective of human health and the environment,' utilize 'permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable,' and be 'cost-effective' and b) attain applicable, relevant and appropriate regulations (ARARs); and c) provide for meaningful public participation. The term ðEGTENC-quality clean-wr ö is important because EPA requires that clean-ups performed by private parties must meet this minimum standard in order to qualify for cost recovery under EGTENC "u g e v k p" 329 \*c + " \*64 " W U E 0 § ; 829 \*c + . In addition. "y j k g " r g t h q t o k p i "c" ðEGTENC-quality clean-wr .ö "r t k c v g " r c t v k u "o w u v "d g " u w d u c p v k m { "e q o r r k c p v "y k j "y j g " P E R "r t q e g f w r e s previously discussed above in paragraph 30.

40. In summary, CRN u "t g u r q p u g " c e v k p u " did not result in a ðCERCLA-quality clean-up ö and were not in substantial compliance with the NCP. The following paragraphs summarize my rationale for my conclusion t j c v "CRN "f k " p q v "r g t h q t o "c" ðEGTENC-quality clean-wr ö

a) CRN u "u q n w k p "y c u "p q v "r g t o c p g p v "c p f "d g e c w u g "q h "y k u "l p c f g s w c e { . "j c f "v q " be repeated multiple times which was not cost-effective, but rather, caused significant and wasteful escalation of costs. The i p c f g s w c v g "c p f "w p u w e e g u l h w l p k k c r l ð q x g t -d c i i k p i ö " work failed within one or two "y g g m "c p f "y j g "u g e q p f "ð q x g t -d c i i k p i ö "g r k u q f g "also failed after APL failed to deliver the crystals within the short time period anticipated. CRN u " subcontractor, Patriot, characterized "d q j "q h "y j g u g "h k g f "c w g o r w "c u "ö v g o r q t c t { ö " measures in workplans submitted months after the failed over-bagging episodes.

b) CRNu'uqrwkqp'y cu'pqveuv-effective. Besides the additional, unnecessary costs fuewugf'cdqxg.'CRNu'gzugo gn'r qqt planning and organization of the work spaces at both terminals resulted in the repeated construction, dismantling, and reconstruction of various staging, containment, and decontamination areas during the unsuccessful over-bagging attempts. In addition, each time over-bagging occurred, new containers became contaminated with ferrous chloride, further escalating costs due to the need to decontaminate the new (and formerly clean) containers.

c) CRNu'uqrwkqp'y cu'pqvr tqvexg'qh'j wo cp'j gcmj 'cpf 'y g'gpxkqnment. APL failed to provide documentation that established worker safety procedures and daily safety meetings for the initial over-bagging and second over-bagging episodes. Numerous photographs taken by Patriot document the lack of or improper use of personal protective equipment in performing clean-wr'cum'ucpf 'wpuchg'ceu'ego o kwg'd{ 'Rcvlqw' site workers. In addition, photographs by Patriot document a substantial number of ferrous chloride releases to surface paving due to inadequate containment at the site. It is unclear because of poor documentation whether all of the releases of ferrous chloride were identified and addressed. The current Google Earth aerial photograph images for the CUT terminal clearly show numerous releases to the paving where containers were stored on trailers in the same areas as photographed by Patriot. This is evidence that pwo gtqw.'wpeqptqngf 'tgrgcugu'qh'lgttqw'ej uqtkf g'qeewtgf 'cu'c'tguwn'qh'CRNu'eugcpw' " work.

d) CRNu'uqrwkqp"did not include any documented evaluation of applicable regulations (ARARs). There is no documentation that suggests that APL listed or

considered ARARS at any time during clean-up operations in a manner that would be equal to the quality of the ARARS-quality clean-up work.

e) CRN did not include any meaningful public participation. There is no documentation or communications that indicate that any efforts were made to inform the public regarding the release or clean-up.

41. The following paragraphs summarize my rationale for my conclusion that APL did not perform clean-up actions that are substantially compliant with the NCP.

a) Health and Safety Plan ó APL did not prepare a health and safety plan before the clean-up work was initiated. Tailgate safety meetings reportedly were conducted; however, no documentation is available to support this claim. Personal protective equipment was inconsistently and sometime incorrectly used as documented in photographs. Unsafe work practices are also documented in photographs.

b) Community Relations ó As stated previously, there is no documentation or communications that indicate that any efforts were made to inform the public regarding the release or clean-up.

c) Documentation- CRN's documentation was limited. The documentation provided was incomplete and inaccurate. APL did not even provide a chronological description of the events as they occurred and did not prepare any reports describing the results of the clean-up actions taken by APL. Accounting records were also limited and incomplete. APL did not provide cost documents that were separated by task. Many of the charges are not associated with the remedy and are not CERCLA-recoverable costs. APL did not provide an evaluation of impacts to health and the environment. Substantial releases of ferrous chloride are documented; however, there



is little to no information documenting and verifying required clean-up actions. APL did not notify agencies of the second release and overbag event based on documents provided to me.

d) Removal Site Evaluation- APL did not provide sufficient information to determine whether this portion of the NCP was performed. No evaluation of the threat to the public is documented. No evaluation on the magnitude of the threat is documented and because of this lack of information, there was no understanding of why the bags leaked to begin with, and this allowed APL to erroneously choose an over-bagging method which led to the second and third leak events. There is no evaluation of what processes were used to determine what removal actions were necessary and no feasibility study was performed to provide the requisite information that would have supported APL in choosing the effective remedy. Without the feasibility study and proper evaluation of the remedial alternatives to guide them, APL chose an incorrect, temporary method o qvxcvzf "d{ "CRNau" f gukt g"vq"o kpk k g"equu"cpf "kpuvpgpeg"qp"j qrf kpi "vj g"tgttqwu" ej nqt kf g"et { ucnu"oj quci gö"wpvklk"tgegkxgf "t gko dwtugo gpv'ht "ku"o qwpv kpi "t gur qpug" costs. k"cf f kkp."CRNau"cuugt vqp"qh'eqo r rvg"cpf "gzenwukxg"eqptqnlqxtg "vj g"dwmldci u" containing the ferrous chloride crystals from discharge onwards, without any consultation with KWS regarding appropriate and/or adequate methods of containing the product also eqptkdwgf "vq"CRNau"lpeqttgevej qleg"qh'vj g"qxgt-dci i kpi "o gvj qf "xu0vj g"ötqmqlhñ"dlp" method.

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I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge.

Executed on June 14, 2013, at Anaheim, California.

A handwritten signature in black ink, appearing to read "J.V. Dagdigian", with a horizontal line extending from the end of the signature.

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Dr. Jeffrey V. Dagdigian